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# Preparing for a Virtual Road Safety Audit (RSA)

## Technical Report Documentation Page

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<b>16. ABSTRACT</b> This guide is intended to support agencies that are interested in conducting virtual and hybrid pedestrian-focused RSAs and includes information on the RSA process, necessary data, and special considerations to support remote participation. It contains recommendations for coordinating virtual reviews of a corridor, collecting data that can partially substitute for in-field activities, and integrating small in-field activities. Also included are example virtual RSA agendas and field map packets. This guide will aid practitioners to continue RSAs within the constraints of group size limits, travel restrictions, and other State and local public health requirements.			
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# Preparing for a Virtual Road Safety Audit

## Introduction

The following information is intended to assist an agency in preparing for a Federal Highway Administration (FHWA)-led pedestrian-focused RSA that is either completely virtual or includes a limited and optional field review. These instructions and recommendations have been modified from an in-person RSA format and used for several virtual RSAs in 2020. The preparation, in-person elements, and meeting format are flexible and are intended to be modified in accordance with local public health requirements on non-essential travel and meeting room capacity requirements. For a complete overview of the RSA process, consult the FHWA Pedestrian and Bicyclist RSA Guide and Prompt Lists (figure 1).<sup>1</sup>

## 1. Identify a Date of the Event

The FHWA STEP program supports **two-day RSA events** that include instructional training, a field visit, and discussions about findings and recommendations. These two-day events are a significant time commitment for RSA participants, so a local host should contact participants several weeks in advance of the anticipated event. It is a good practice to offer multiple options for dates when contacting invitees to find a two-day period that works for most participants' availability. While there are time savings from a virtual RSA due to reduced field review,

the structure is still recommended for two consecutive days.

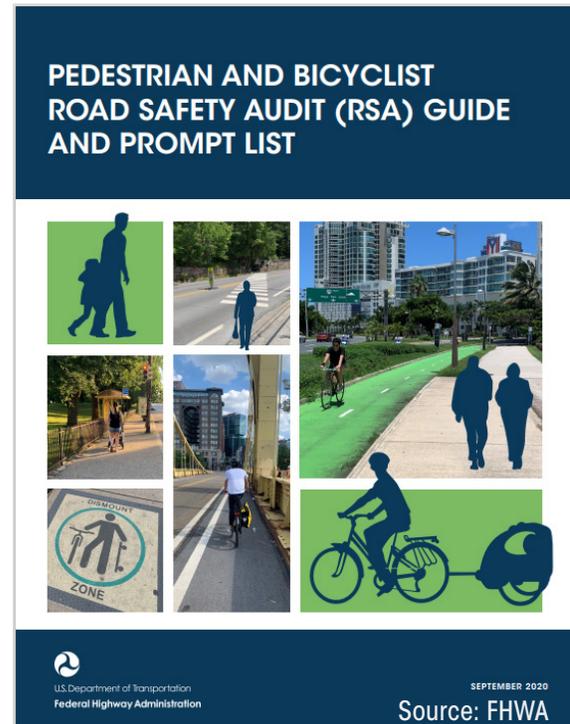


Figure 1. Graphic. The new FHWA Pedestrian and Bicyclist RSA Guide and Prompt List combines modes and updates the RSA process.

## 2. Identify and Invite Core Personnel and Participants

The RSA should be led by a core team of local officials consisting of the two or more agency staff most directly invested in the process and outcomes of the RSA. The core team is responsible for planning and logistics for the RSA. A **full RSA team of six or more individuals** representing a variety of disciplines and perspectives will also attend and actively contribute during the RSA. The participant team is expected to attend all events and may be asked to review draft report materials following the RSA.

FHWA, "Pedestrian and Bicyclist Road Safety Audit (RSA) Guide and Prompt List," (2020), [https://safety.fhwa.dot.gov/ped\\_bike/tools\\_solve/docs/fhwasa20042.pdf](https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa20042.pdf)

However, some participants, such as first responders, may only be available for a limited time during the two-day event. Others may be invited to participate in the instructional training, but they may not be required for full participation in the two-day event. A virtual RSA may allow the addition of team members who wish to observe the process in lieu of full participation; this should be approved with the local host and facilitator.

The RSA team should include representatives from a variety of disciplines or agencies, according to the characteristics of the community and study area. The full participant team (including core personnel) should include the following representatives from local and/or State departments as applicable:

1. Public Works (Streets Maintenance).
2. Public transit.
3. Law enforcement.
4. Planning or Community Development.
5. Transportation planning (or Metropolitan Planning Organization).
6. Transportation engineering or traffic safety.

Additional stakeholders to consider inviting to the participant team include the following:

1. Emergency medical services (EMS) or first responders.
2. Public health.
3. K-12 schools.
4. Neighborhood associations or community leaders.
5. Elected officials.
6. Economic development or commerce agency.

It is critical to include representation from the transportation agency who owns or maintains the roadway facilities in the study area. For the purposes of an FHWA-sponsored RSA, the core team should also invite a representative from the State FHWA Division office.

### **3. Select Site(s) for the RSA**

A crash analysis is often conducted to determine specific locations of interest for the RSA—possibly through a hot spot or predictive analysis (also known as systemic analysis). If the agency or State has a Pedestrian Safety Action Plan, the plan may identify priority areas for investigation during the RSA. During RSAs focused on modes with limited crash data, such as pedestrian- or bicyclist-focused RSAs, other factors should be taken into consideration, including crash risk, network connectivity, identification in a pedestrian plan, etc. It is also important to look at all crashes within a study area, and

not just those pertaining to the focus of the RSA (such as pedestrians).

The number and length of locations that an RSA covers will vary. As a general rule of thumb, the team may be able to review—and potentially visit as part of an optional field review—a total of four to six distinct sites within close proximity of each other or focus on 1 to 2 miles of a corridor(s) with consistent characteristics (e.g. land use context, speed, etc.) during a two-day RSA. The corridor will likely be divided into segments to support a detailed review (see “Create Meeting Materials” below). The core team should coordinate with the transportation agency that owns the roadway facility before finalizing RSA locations.

## 4. Collect Data

The FHWA facilitator will work with the host agency liaison to collect the necessary data to prepare for the field review. The data is necessary to understand potential crash risks and specific intersections or locations for focused attention. The data will also be used to create base maps and crash diagrams to be used during the RSA site review. A virtual RSA places greater emphasis on comprehensive data to illustrate conflicts, issues, and trends.



**Figure 2. Photograph. Example drone footage image with orientation note from City of Albuquerque RSA.**

Data sets representing the study area that should be provided to the technical team before the RSA include the following:

- » Corridor imagery, including video of pedestrian and vehicular activity, to complement the aerial imagery in the field packet. Some jurisdictions are capable of providing drone footage, while others may be limited to footage captured during a prep walking tour or windshield tour (figure 2). The local host and FHWA facilitator will discuss these options for capturing imagery prior to the RSA.
- » Crash data (GIS) and original, full crash reports, to include the crash description and diagram if possible.
- » Roadway characteristics (average annual daily traffic, posted speeds, etc.).
- » Pedestrian and bicycle volume estimates.

- » Plans for roadway or safety improvements (for example, are there any planned improvements that will be implemented in the near future).
- » Plans for changes in land use/property access.
- » Location and types of pedestrian generators and attractors (i.e., employers, schools, parks, etc.).
- » Transit routes, stops, boarding data.
- » GIS data showing pedestrian and bicyclist facilities (if available).
- » Community surveys or input (if available) about near-misses or perceived safety/access issues.

Additional data that may be brought by the participant team to the meeting:

- » Planned maintenance activities (repaving, mowing, sign replacement, etc.).
- » Speed study results and/or 85th-percentile speeds.
- » Actual speeds, as observed during the optional field review.
- » Signalized intersection operation (signal phasing, turn restrictions, etc.).
- » Parking restrictions or requirements.
- » Curbside activities, policies, and schedules (i.e. street cleaning, trash collection, EMS access).
- » Agency policies for consideration for pedestrian/bicycle safety improvements.

## 5. Create Meeting Materials

The host agency and the facilitator will be responsible for developing a draft agenda or schedule for the RSA. See below for an **example virtual and hybrid agenda** for a two-day RSA event. The FHWA team will create materials for the event – such as site maps for each of the study locations and an overall field map packet in PDF or other accessible format. The site maps should divide the corridor into segments with sufficient scale and resolution that allow the virtual RSA team members to observe key details like pavement markings, sidewalk gaps, and worn paths. For example, the site maps for a mile-long corridor could be depicted in a series of 5 maps each showing approximately 1,000 feet. An example segmented corridor with smaller individual site maps is shown at the end of this document.

The FHWA team will also be responsible for preparing presentations that will be used during the kickoff and preliminary findings meetings. The presentation should include information on local plans, pending developments, demographics, relevant traffic studies, and transit operations, among others. The RSA materials—the study area maps and map packet—should be shared with participants a week prior to the virtual event to give team members an improved understanding of the corridor.

## 6. Conduct the Meeting

The host agency liaison and the FHWA facilitator will be responsible for selecting the virtual meeting platform for the session. Options may include Zoom, Microsoft

Teams, and Webex. Each platform has its benefits and limitations, and some agencies may be prohibited from using certain platforms. The chosen technology platform should allow for screen sharing and chats among all team members. Once selected, the host agency will distribute the meeting login information to the RSA team members. While a subset of the RSA team members are not prohibited from sitting in the same physical space, the combination of mask requirements, office capacity restrictions, distancing requirements, and remote participation of other team members may increase confusion during group discussions. Complete remote attendance may be encouraged for these reasons.

Active participation is essential to the success of a virtual RSA. Team members should have their webcams on throughout the RSA. The facilitator will also ask team members for feedback, reactions, and personal knowledge of corridor conditions during review of the map materials and data. Team members are encouraged to share their screens to describe their findings and observations as shown in figure 3 (e.g., Bing Maps Streetside or Google Maps Streetview). The agenda should include frequent breaks to allow participants to attend to other demands and reduce screen fatigue. However, similar to an in-person RSA, team members should be directed to contact the facilitator through email or the virtual platform’s chat function if they have to leave the session.

The facilitator should orient the RSA team members when presenting drone footage, aerial imagery, and other imagery to support clear understanding. This may resemble the inclusion of a north arrow on

each image, progressing through images in a set orientation (i.e., north to south through the corridor), and a notation on the presentation slides (e.g., “Along Main Street, looking north”).



Figure 3. Photograph. Google Streetview image of marked crosswalk at a signalized intersection during RSA corridor review.

## 7. Additional Field Review and Data Collection

There may be an opportunity to conduct additional data collection and field review to support the virtual RSA’s observations and recommendations. RSA team members may be allowed—given local guidance—to walk the corridor after the completion of Day 1’s discussions. This is an optional element and it should be clearly communicated to the team members that it is voluntary. Those who wish to participate must notify the RSA facilitator, and the group will convene at an agreed upon corridor

location. Similar to an in-person event, the team members are advised to record their observations on the field map packet and take pictures and videos of conditions. The field review includes both daytime and nighttime elements. Team members should observe local health guidance, such as distancing, mask wearing, and group size limitations when conducting the field review. Additionally, those participating in the supplementary field data collection should wear the appropriate clothing for the conditions, such as a high visibility safety vest.

The facilitator should direct those participating in the optional field review to share their pictures for review on Day 2. This sharing may occur through email, text, or upload to a cloud platform like Microsoft OneDrive. On Day 2, the facilitator will summarize the findings from the previous day and then ask for discussion on the field review's findings. At this time, the team members who embarked on the field review will share their observations. The observations and ensuing discussion will be added to Day 1's notes and findings.

A virtual RSA can result in screen fatigue that reduces momentum towards report drafting on Day 2. If the RSA team members lose interest or participation stalls, the facilitator may opt for the group to adjourn and reconvene within a two-week window. The facilitator should return to the group during this third remote meeting with the RSA observations in a draft report format.



**Figure 4. Photograph. Optional field review on Day 1 after remote meeting for Knoxville RSA.**

The facilitator should screenshare the findings and restart the discussion on the preliminary recommendations.

## **8. Additional Information**

For more information on RSAs, please refer to the following links for access to the current guidebook and case studies. The new FHWA Pedestrian and Bicyclist RSA Guide and Prompt Lists includes recommendations on alternatives to an in-person RSA.

### **FHWA RSA Resources:**

- » FHWA Pedestrian and Bicyclist RSA Guide and Prompt Lists: [https://safety.fhwa.dot.gov/ped\\_bike/tools\\_solve/docs/fhwasa20042.pdf](https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa20042.pdf)
- » Improving Access to Transit Using Road Safety Audits: Four Case Studies: <https://safety.fhwa.dot.gov/rsa/resources/docs/fhwasa16120.pdf>
- » General RSA Resources: <https://safety.fhwa.dot.gov/rsa/resources/>

# Example Agenda - Virtual Pedestrian RSA

## Day 1

Day 1 Description: The RSA team conducts a kick-off meeting and discusses crashes for each of the study area segments and overall conditions. After the kick-off meeting, the RSA team begins a review of the corridor's segments with the assistance of aerial imagery and drone footage. Following the conclusion of Day 1's virtual session, local RSA team members walk along the corridor and review traffic conditions, and they may remain in the field to complete a nighttime corridor review.

[Join Microsoft Teams Meeting](#) (virtual meeting link)

- |                  |  |
|------------------|--|
| 8:00–10:00 AM    | RSA Kick-off Meeting <ul style="list-style-type: none"><li>» <i>Introduction of stakeholders and RSA team</i></li><li>» <i>Introduction to the RSA process</i></li><li>» <i>Pedestrian safety overview</i></li><li>» <i>Overview of study area</i></li></ul> |
| 10:00–10:15 AM   | Break  |
| 10:15 AM–1:00 PM | Document Issues <ul style="list-style-type: none"><li>» <i>Segment by segment review</i></li><li>» <i>Assign homework and additional field investigation</i></li></ul>   |
| 3:00–4:00 PM     | Additional Field Investigation (optional) <ul style="list-style-type: none"><li>» <i>Meet at ACME Corp, 123 North Way</i></li><li>» <i>Wear high visibility safety vest</i></li><li>» <i>Notify RSA facilitator if going into the field</i></li></ul>        |
| 7:30–9:00 PM     | Nighttime Field Review (optional) <ul style="list-style-type: none"><li>» <i>Meet at ACME Corp, 123 North Way</i></li><li>» <i>Wear high visibility safety vest</i></li><li>» <i>Notify RSA facilitator if going into the field</i></li></ul>                |

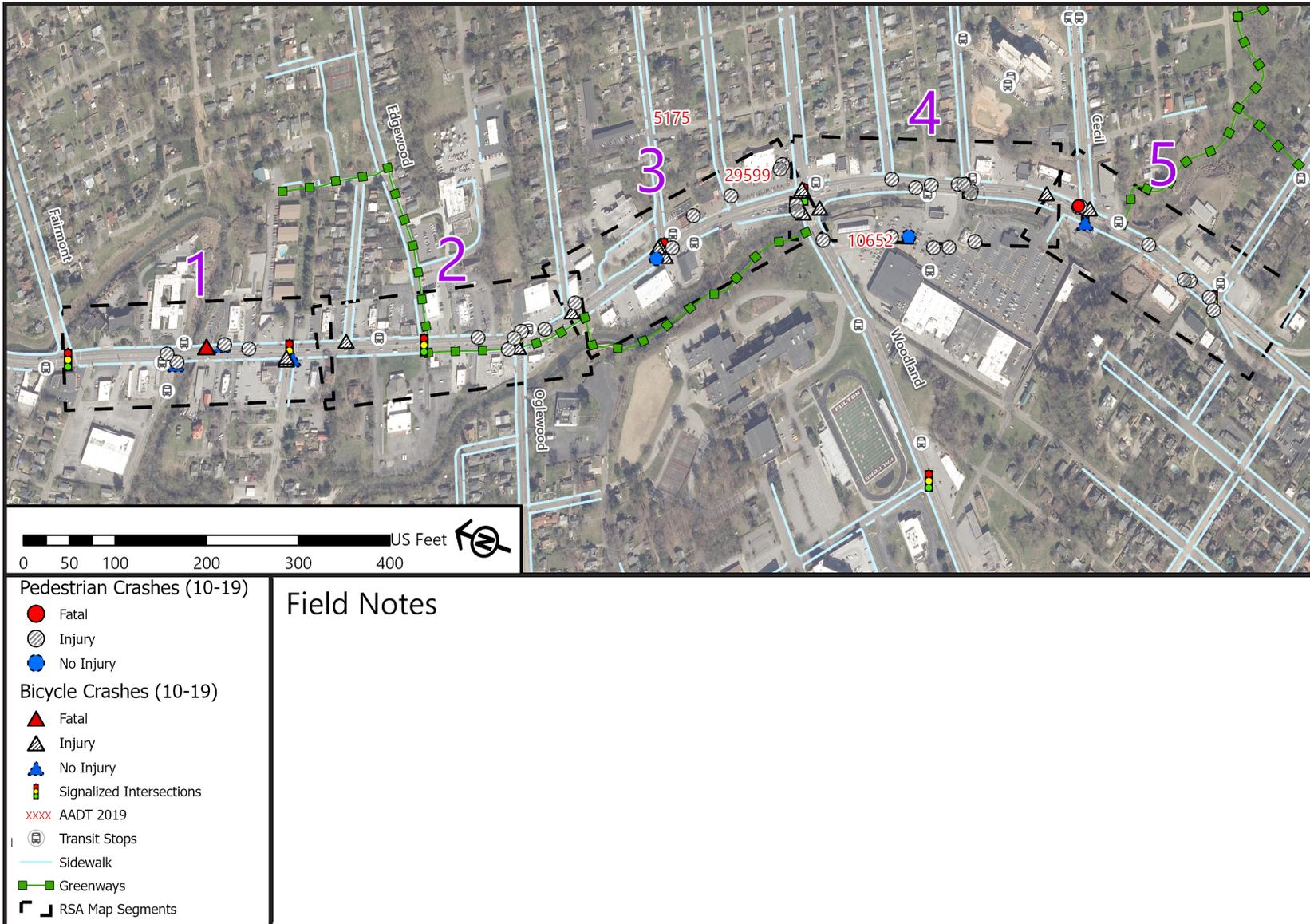
## Day 2

Day 2 Description: The RSA team reconvenes to continue discussing the corridor, including new field work and the nighttime field review. Discussion includes a review of the STEP countermeasures and potential applications.

[Join Microsoft Teams Meeting](#) (virtual meeting link)

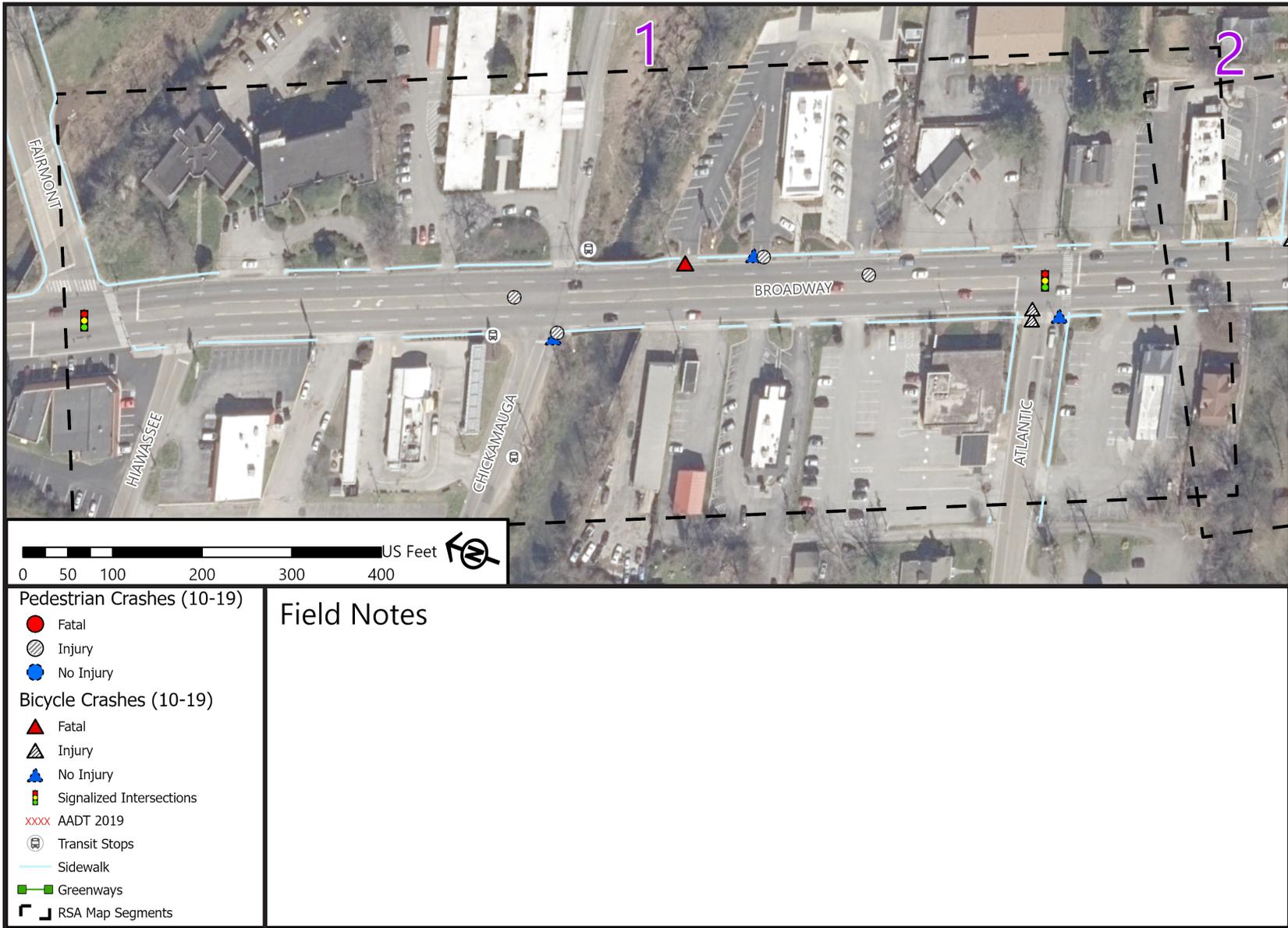
- |                  |  |
|------------------|--|
| 8:00–10:00 AM    | Recap Day 1 Findings <ul style="list-style-type: none"><li>» <i>Review field and nighttime field data gathering</i></li><li>» <i>Summarize issues</i></li><li>» <i>Discuss corridor-relevant countermeasures</i></li></ul> |
| 10:00–10:15 AM   | Break  |
| 10:15 AM–1:00 PM | Team Discussion/Preliminary Findings <ul style="list-style-type: none"><li>» <i>Prioritize sites</i></li><li>» <i>Identify potential countermeasures</i></li><li>» <i>Discuss next steps</i></li></ul>                     |

# Example Map Packet - Virtual Pedestrian RSA



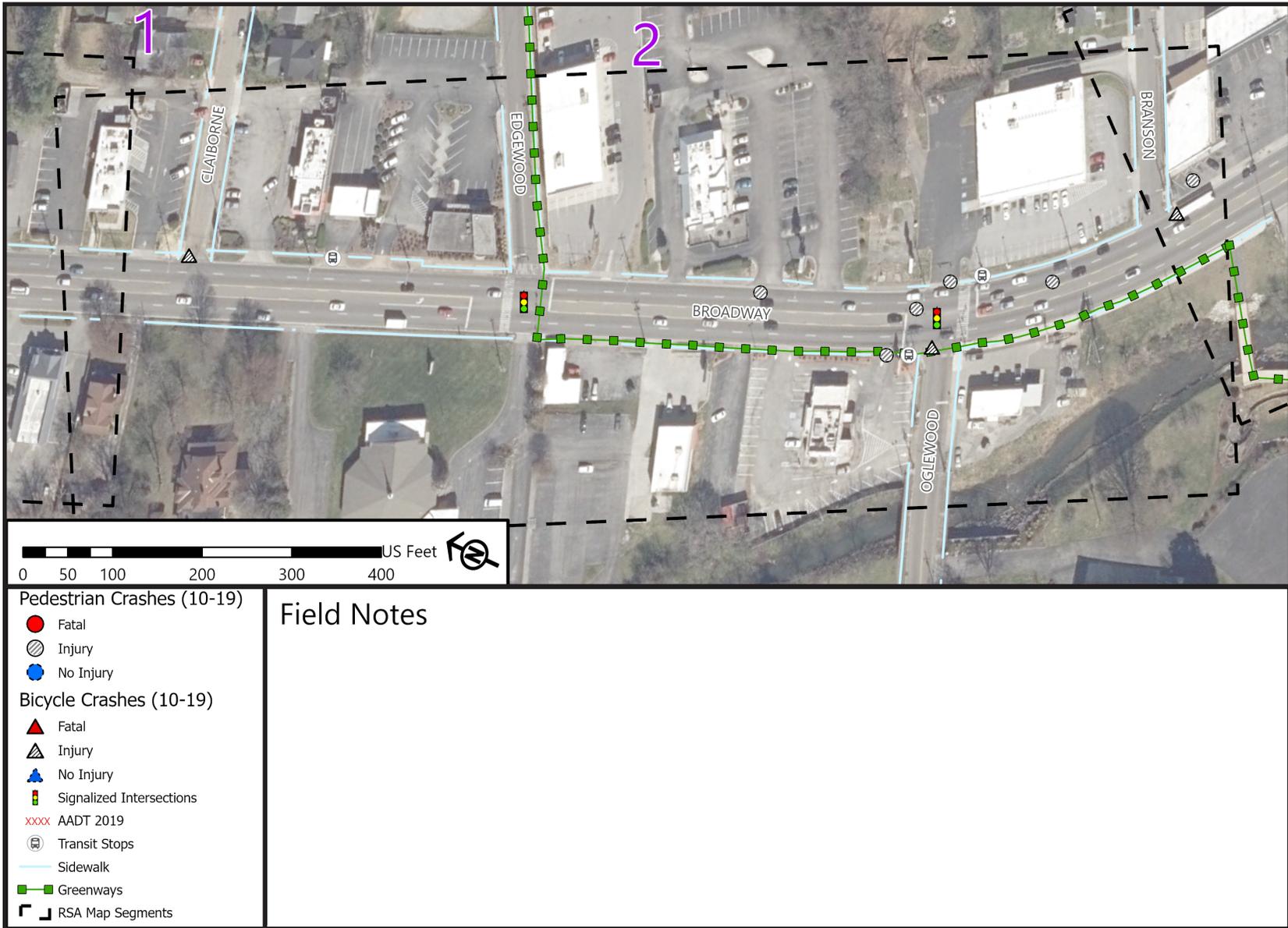
Source: Knoxville/Knox County

Figure 5. Map. Example overview RSA map with five site maps.



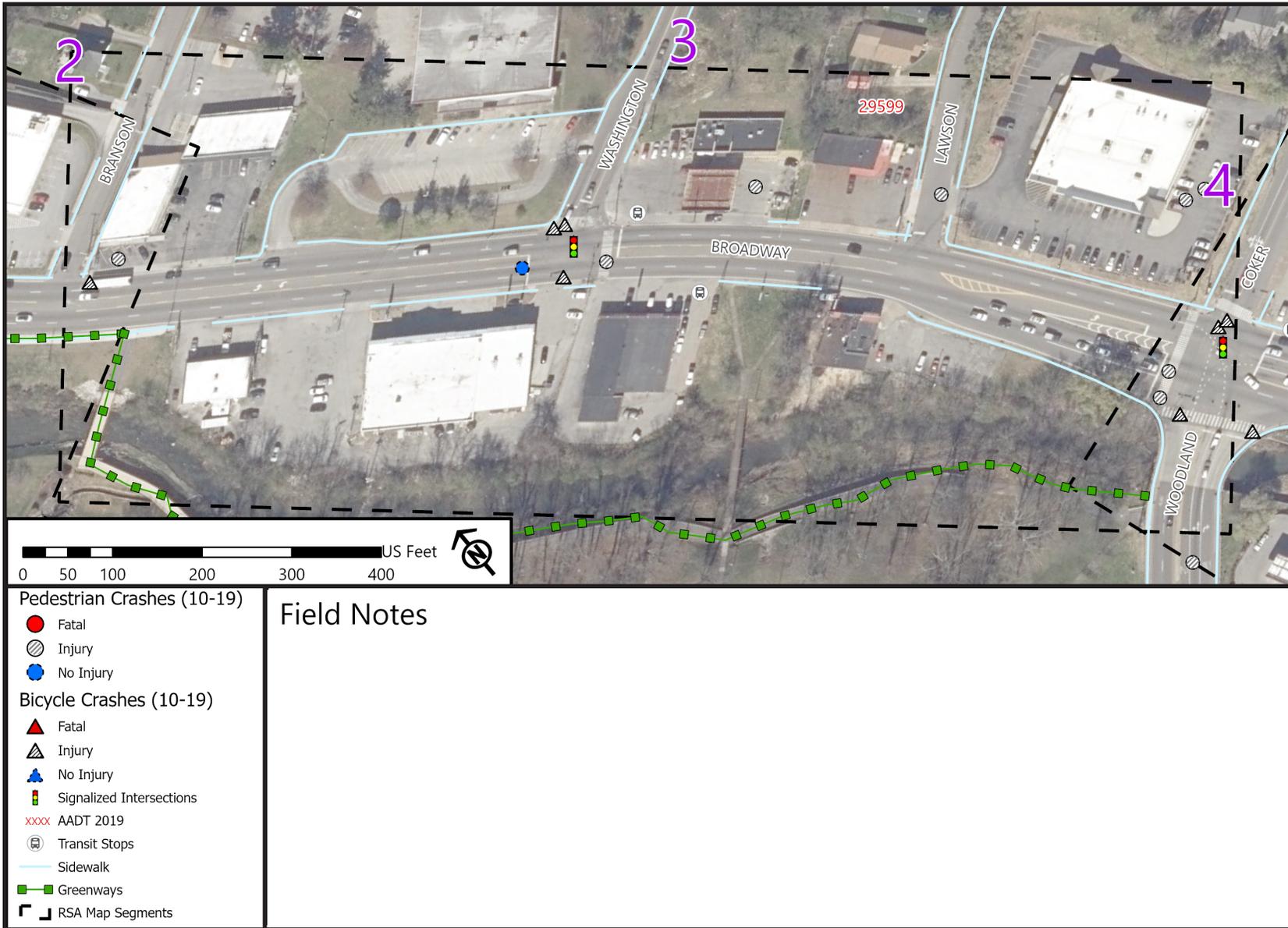
Source: Knoxville/Knox County

Figure 6. Map. Site map for segment 1.



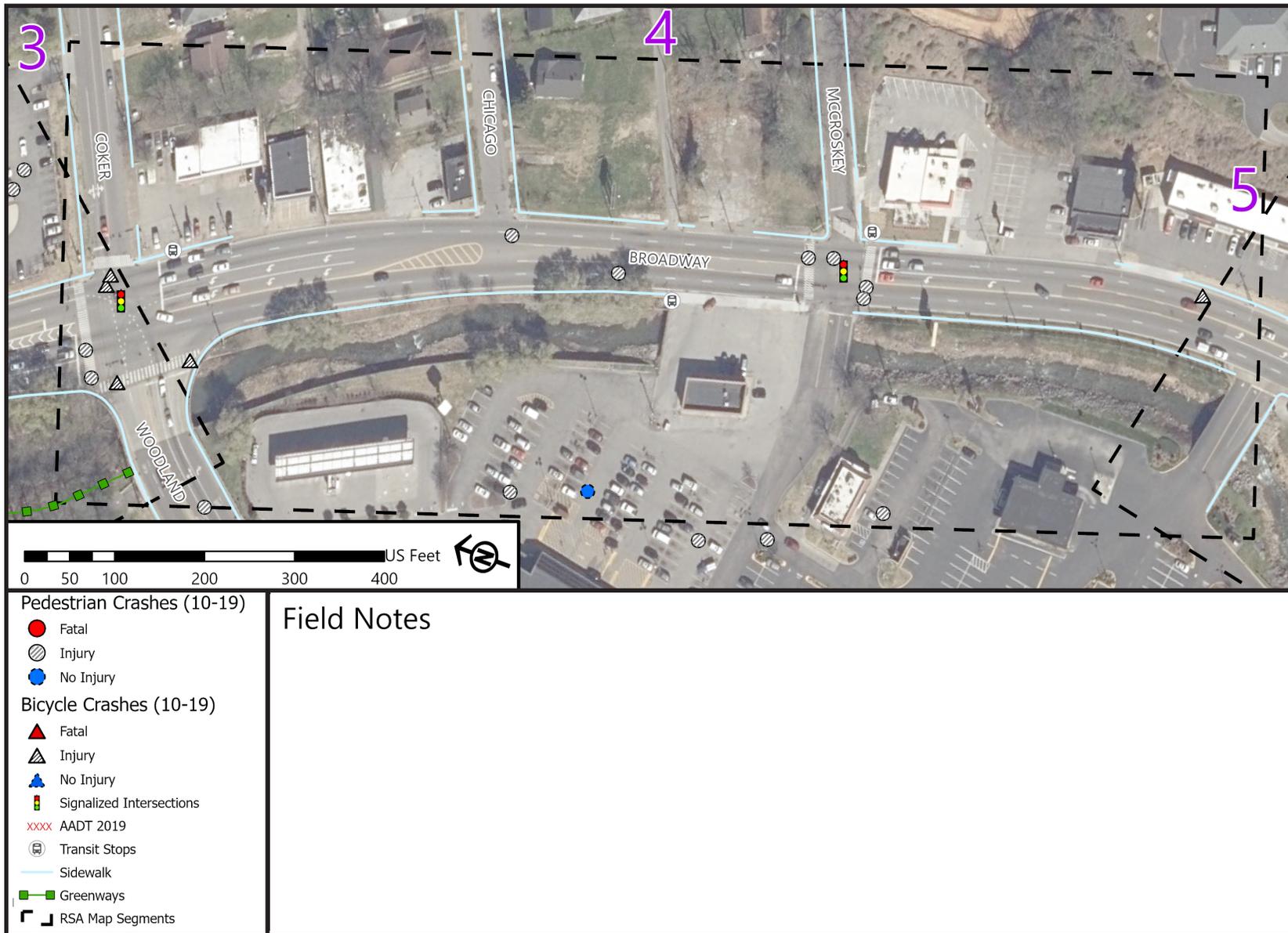
Source: Knoxville/Knox County

Figure 7. Map. Site map for segment 2.



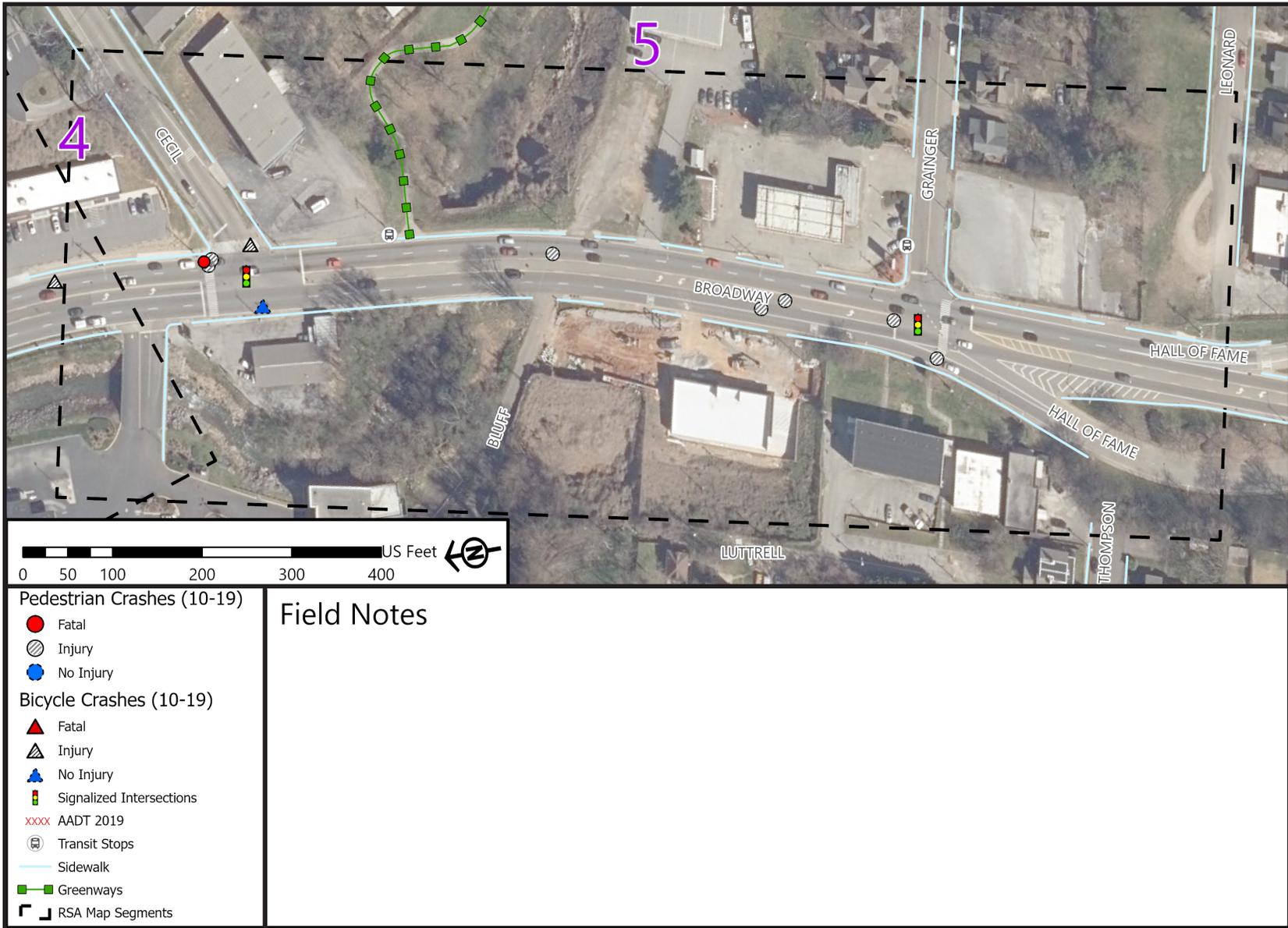
Source: Knoxville/Knox County

Figure 8. Map. Site map for segment 3.



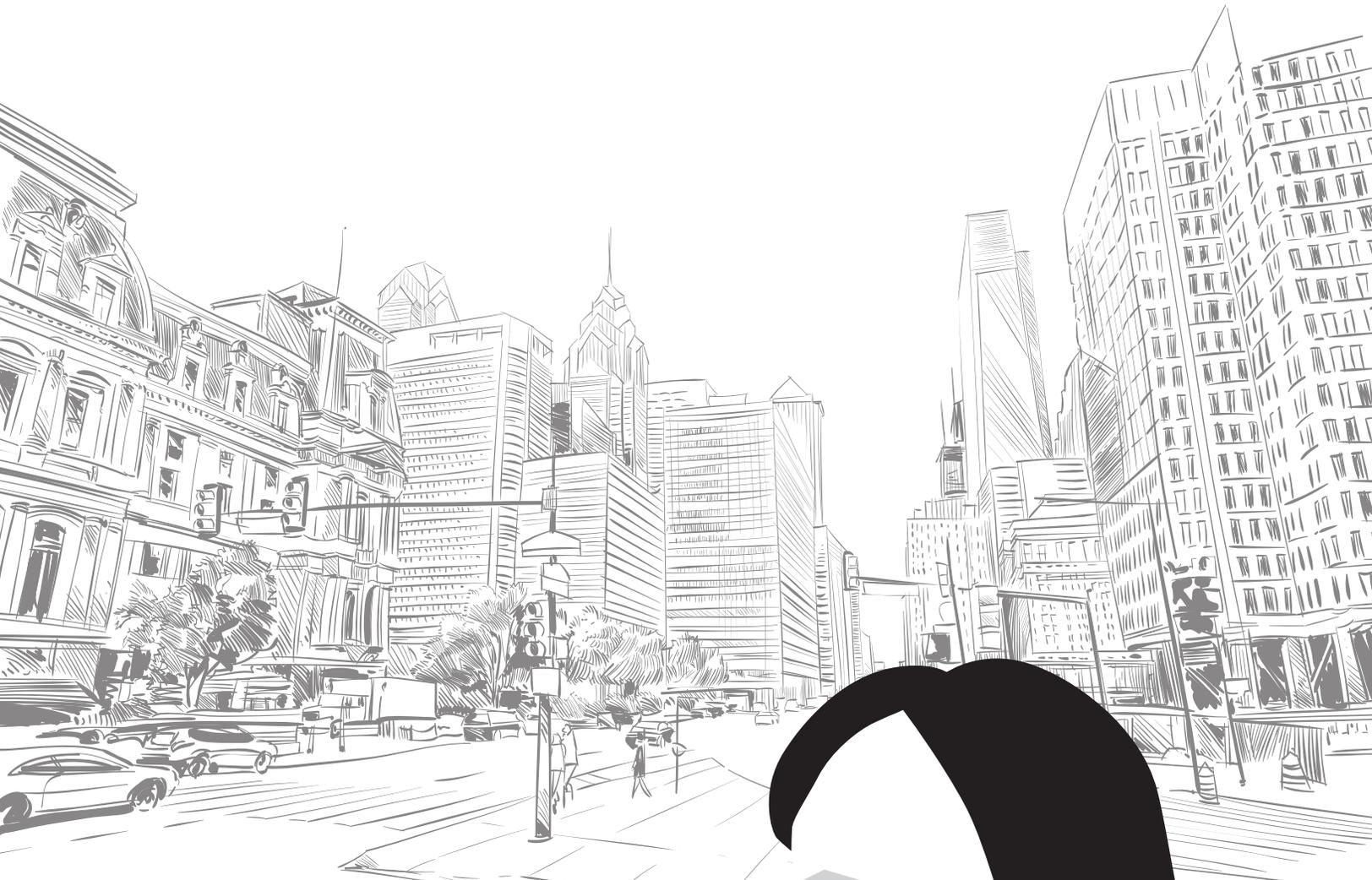
Source: Knoxville/Knox County

Figure 9. Map. Site map for segment 4.



Source: Knoxville/Knox County

Figure 10. Map. Site map for segment 5.



Source: FHWA